

CLAIMS

1. A valve comprising a housing having an inlet and an outlet, and a pressure sensing port, a piston slidable in a part of the housing in response to a difference between a first fluid pressure at the pressure sensing port on the one side of the piston, and a second fluid pressure at the inlet and/or outlet on the other side of the piston, a valve member carried by the piston and operable thereby to close the inlet when said second fluid pressure is less than a value sufficiently greater than said first fluid pressure; wherein the valve member is movable with respect to the piston to facilitate closing of the inlet, in response to a fluid flow from the housing to the inlet, when the piston is not acting to close the inlet.
2. A valve according to claim 1, wherein piston biasing means are arranged to bias the piston into a position in which the valve member closes the inlet.
3. A valve according to claim 2, wherein the piston biasing means comprise one or more helical springs.
4. A valve according to claim 1, 2 or 3, wherein the valve member is formed with an inlet surface arranged to come into contact with a valve seat of the inlet and an opposed surface facing into the housing.
5. A valve according to claim 4, wherein the area of the opposed surface of the valve member is substantially equal to the area of a surface of the piston facing said opposed surface..
6. A valve according to any preceding claim, wherein the valve member has a stem slidably guided within a part of the piston.

7. A valve according to any preceding claim, wherein valve member biasing means are arranged to bias the valve member to close the inlet.
8. A valve according to claim 7, wherein the valve member biasing means comprises a helical spring.
5
9. A valve according to any preceding claim, wherein manual shut-off means are provided for closing the valve.
10. A valve according to claim 9, wherein the manual shut-off means comprise a spindle having a non-round proximal portion and a threaded distal portion.
10
11. A valve according to claim 10, wherein said distal portion is engaged in a non-rotatable threaded sleeve, the sleeve being slidable along the distal portion between a normal position in which the piston is movable and a maintenance position in which the sleeve retains the piston and the valve member in the closed position.
15

AMENDED CLAIMS

[received by the International Bureau on 18 June 2004 (18.06.04);
original claim 1 amended; original claim 9 cancelled;
original claims 10 and 11 replaced by renumbered claims 9 and 10;
remaining claims unchanged (2 pages)]

1. A valve comprising a housing having an inlet and an outlet, and a pressure sensing port, a piston slidable in a part of the housing in response to a difference between a first fluid pressure at the pressure sensing port on the one side of the piston, and a second fluid pressure at the inlet and/or outlet on the other side of the piston, a valve member carried by the piston and operable thereby to close the inlet when said second fluid pressure is less than a value sufficiently greater than said first fluid pressure; wherein the valve member is movable with respect to the piston to facilitate closing of the inlet, in response to a fluid flow from the housing to the inlet, when the piston is not acting to close the inlet, and wherein manual shut-off means are provided for closing the valve.
- 15 2. A valve according to claim 1, wherein piston biasing means are arranged to bias the piston into a position in which the valve member closes the inlet.
3. A valve according to claim 2, wherein the piston biasing means comprise one or more helical springs.
- 20 4. A valve according to claim 1, 2 or 3, wherein the valve member is formed with an inlet surface arranged to come into contact with a valve seat of the inlet and an opposed surface facing into the housing.
- 25 5. A valve according to claim 4, wherein the area of the opposed surface of the valve member is substantially equal to the area of a surface of the piston facing said opposed surface.

6. A valve according to any preceding claim, wherein the valve member has a stem slidably guided within a part of the piston.
7. A valve according to any preceding claim, wherein valve member biasing means are arranged to bias the valve member to close the inlet.
5
8. A valve according to claim 7, wherein the valve member biasing means comprises a helical spring.
- 10 9. A valve according to any preceding claim, wherein the manual shut-off means comprise a spindle having a non-round proximal portion and a threaded distal portion.
- 15 10. A valve according to claim 9, wherein said distal portion is engaged in a non-rotatable threaded sleeve, the sleeve being slidable along the distal portion between a normal position in which the piston is movable and a maintenance position in which the sleeve retains the piston and the valve member in the closed position.